Office Memorandum • UNITED STATES GOVERNMENT

A/B, VII, 1, 3

TO : Deputy Director of Security
VIA : Chief, Medical Staff
FROM : Chief, Program Coordination Division, Medical Office

DATE: 8 April 1953

SUBJECT: ARTICHOKE; Evaluation of Hypospray

1. The Medical Office has completed preliminary investigation of the Hypospray. In view of the many derrogatory findings, it was felt advisable to submit this report so the merits of the project may be re-evaluated.

2. [redacted] C

[redacted] are the principal commerical firms conducting research in the development of the Hypospray. Responsible officials of these firms have been contacted, debriefed and the research results evaluated. These officials uniformly agreed that the Hypospray has not proven to be successful and thus far is not a satisfactory substitute for the standard needle and syringe injection technique. They concurred on the following specific details:

a. The Hypospray does not provide consistently painless injection.

b. Bleeding regularly accompanies jet injection, similar in degree to that encountered with needle injection.

c. Any movement of the device during injection results in multiple lacerations of the skin.

d. The Hypospray might possibly inject through the thickness of a shirt, but the administered dose would be decreased, and the injection would not be sterile. It is not felt injection through clothing would be effective.

e. The effective dose delivered and the depth of penetration cannot be determined accurately. (Consequently, the rate of absorption and eventual effect of the type drug used in ARTICHOKE work cannot be predicted with acceptable accuracy.)

f. The Hypospray cannot be used for intravenous injections. This is significant because interrogation techniques utilizing drugs require use of the intravenous route.

g. The Hypospray can administer a maximum of 1 cc. of material; in order to administer 2 cc., the device would have to be at least doubled in size.

[redacted]

[redacted]

h. Ampules containing 1/4, 1/2 and 1 cc. of medication have been developed. Of the two or three types developed, none have proven completely satisfactory.

i. The Hypospray is capable of injecting practically any solution, even those quite viscous. Suspensions can also be injected if the particles are not too large.

j. The hypospray is the most effective jet injection device developed to date. It is approximately 9" long, 1 1/2" in diameter and weighs 1200-1500 grams. Many experimental models of smaller size have been developed, some of fountain pen size, but these were discarded because they contained only 1/50 cc. and the effective amount administered varied considerably. Five experimental jet injection devices were examined at the [redacted] and thirty five at the [redacted] C

k. No way has been found to eliminate the noise made by the instrument at the time of release.

3. [redacted] suggested to the Research Department of the [redacted] C that the size of the Hypospray might be reduced by utilizing a compressed gas such as nitrogen as a power source. They felt such a device would be mechanically feasible and would probably reduce the size considerably. The Research Director stated that a project to develop this injector would cost about [redacted] H Such a device would probably not correct the other objectionable features listed above.

4. The Medical Office notes with misgivings the generally pessimistic attitude of those engaged in the research and development of the Hypospray and their tendency to regard it as a "white elephant". The impression was gained that the major objections are intrinsic to the jet injection principle and will be most difficult to eliminate. This Office cannot help but feel that the Hypospray is of no value in its present state of development and that the project should be abandoned except for periodic checks with the researchers to follow progress made. In the event a jet injection device of sufficient merit to be acceptable for general medical use is developed, steps would be taken to determine the possibilities of adapting it for clandestine use. The further refinements required for clandestine use would include elimination of noise, decrease in size and study of its effectiveness through clothing, since these are minor factors in its general medical use.

5. Decision as to the future of the project rests with Inspection and Security Office Staff, due to your greater knowledge of potential operation uses of the device. Investigation has been halted pending your decision.

[redacted] (27 Mar. '53) [redacted] A

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